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(54) Title: METHODS AND SYSTEMS TO ACTIVATE DOWNHOLE TOOLS WITH LIGHT

(57) Abstract: The present invention comprises a system and methods to actuate downhole tools by transmitting an optical signal through an optical fiber to the downhole tool. The optical signal can comprise a specific optical signal frequency, signal, wavelength or intensity. The downhole tool can comprise packers, perforating guns, flow control valves, such as sleeve valves and ball valves, samplers, sensors, pumps, screens (such as to expand), chemical cutters, plugs, detonators, or nipples.